REMARKS

Claims 2 to 10, 55 to 63, and 114 to 117 are pending in the present application. Claims 11 to 53 and 64 to 112 have been withdrawn from consideration and canceled without prejudice. Claims 1, 54 and 113 have been canceled without prejudice. Claims 5, 58, 115, 116 and 117 have been amended for clarity.

Claims 115 to 117 stand rejected under 35 U.S.C. § 112 as not enabled by the specification. Claims 2 to 10 and 115 stand rejected under 35 U.S.C. § 101 as directed to non-statutory subject matter. Claims 2 to 10 and 115 stand rejected under 35 U.S.C. § 102(b) as being disclosed by a mental process augmented by pencil and paper markings. Claims 1 to 7 and 58 to 63 stand rejected under 35 U.S.C. § 102(a) as anticipated by U.S. Patent No. 6,420,698 B1 to Dimsdale (hereinafter Dimsdale). Claims 55 to 57, 114, 116 and 117 stand rejected under 35 U.S.C. § 102(a) as being disclosed by Official notice. Claims 8 to 10 stand rejected under 35 U.S.C. § 103 as being unpatentable over Dimsdale in view of U.S. Patent No. 5,850,223 to Fujita et al. (hereinafter Fujita). These rejections are respectfully traversed by the following remarks.

As to the rejections of claims 115 to 117 under 35 U.S.C. § 112 as not enabled, Applicants respectfully submit that the Examiner's assumption that the "first state" and "second state" referenced in the claims are the only states in which the three dimensional mesh model may exist is incorrect. The use of "first" and "second" states in the claim is merely to differentiate between the referenced states in the claim. *See, e.g., 3M Innovative Props. Co. v. Avery Dennison Corp.*, 350 F.3d 1365, 1371 (Fed. Cir. 2003) ("The use of the terms 'first' and 'second' is a common patent-law convention to distinguish between repeated instances of an element or limitation."). The use of "first" and "second" states is not intended to imply that the three dimensional mesh model may exist only in the first or second state or that no intermediate states may exist between the first and second state of the three dimensional mesh model. Claims 115 to 117 have been amended to clarify that the three dimensional mesh model may exist in at least three states. As described in the present application (e.g., at page 8), the stored ordered list of operations and stored copy of the first state of the mesh model allow each previously performed operation to be applied to the copy of the first state of the mesh model until a desired state of the mesh model is reached and that desired state may be an intermediate state that existed between the first and second states of the mesh model referenced in the claim. Applicants respectfully submit that the rejections of

claims 115 to 117 under 35 U.S.C. § 112 should be withdrawn.

As to the rejections of claims 2 to 10 and 115 under 35 U.S.C. §§ 101 and 102(b) as being disclosed by a mental process augmented by pencil and paper markings, Applicants have amended claims 115 and 5 to specify that the claimed method is to be carried out on a computer system. Applicants respectfully submit that these amendments overcome the rejections under sections 101 and 102 as being disclosed by a mental process augmented by pencil and paper markings.

Claims 2 to 4 depend from claim 115 and claims 6 to 10 depend from claim 5. Accordingly, the arguments presented above in connection with claims 115 and 5 apply equally to claims 2 to 4 and claims 6 to 10. Applicants respectfully submit that the rejections of claims 115 and 2 to 10 under 35 U.S.C. §§ 101 and 102 should be withdrawn.

As to the rejections of claims 1 to 7 and 58 to 63 as anticipated by Dimsdale, in order for a claim to be anticipated under 35 U.S.C. § 102, a single prior art reference must disclose each and every element of the claim in exactly the same way. *See Lindeman Machinenfabrik v. Am. Hoist and Derrick*, 730 F.2d 1452, 1458 (Fed. Cir. 1984); MPEP § 2131. Applicants respectfully submit that this criteria for establishing anticipation is not met here.

The Dimsdale reference describes an "Undo Module" for use in a system for editing three-dimensional models. The Dimsdale undo module "records a stack of actions necessary to undo operations in the reverse order in which they were performed by the user. Each undo-able tool . . . will provide a call with operands which when run will reverse the actions of that tool" (Col. 41:62-67). Thus, Dimsdale describes storing a stack of operations each of which when applied will reverse the action of a previously applied tool, but only for "undo-able" tools in the system.

Applicants respectfully disagree with the Examiner that Dimsdale anticipates any of these claims.

The rejection of claim 1 is moot since that claim has been canceled. Claims 2 to 4 now depend from claim 115.

Claim 115 of the present application recites:

> 115. A method for managing a three dimensional mesh model, comprising:
>
> *storing a copy of a first state of the three dimensional mesh model;*

performing operations on the three dimensional mesh model,
wherein the three dimensional mesh model is in a second state
after performing the operations;

storing a record of each of the operations in an ordered list;
and

*reconstructing the three dimensional mesh model to a third
state by reapplying at least some of the operations stored in the
ordered list to the stored first state of the three dimensional
mesh model.*

In contrast to the embodiment of the present invention recited in claim 115, Dimsdale
does not describe "storing a copy of a first state of the three dimensional mesh model,"
"storing a record of each of the operations in an ordered list" or "reconstructing the three
dimensional mesh model to a state previous to the second state by reapplying at least some of
the operations stored in the ordered list to the stored first state of the three dimensional mesh
model." Dimsdale describes an "undo" module which apparently allows a user to undo an
operation. The operations, however, are apparently applied to a current state of the object,
rather than to a stored earlier state of the object. Dimsdale does not describe storing a copy of
a first state of the object, and then reconstructing a previous state by applying stored
operations to the first state of the object.

Claims 2 to 4 depend from claim 115. Accordingly, the arguments presented above in
connection with claim 115 apply equally to claims 2 to 4. In view of the foregoing, it is
submitted that Dimsdale does not anticipate claims 2 to 4. Furthermore, Fujita does not cure
the deficiencies of Dimsdale (nor has the Examiner alleged that Fujita does).

Applicants also respectfully disagree with the Examiner that Dimsdale anticipates
claims 5 to 7 or 58 to 63.

Claim 5 of the present application recites:

5. A method for restoring a previous version of a three
dimensional mesh model on a computer system comprising:

*retrieving a stored copy of an earlier state of the three
dimensional mesh model on the computer system;*

*retrieving an ordered list of operations on the computer
system;* and

*performing at least some of the operations in the ordered list of
operations on the retrieved copy of the three dimensional mesh
model;*

wherein the ordered list of operations contains the operations

which if performed in order on the earlier state of the three dimensional mesh model would result in a current state of the three dimensional mesh model.

Claim 58 of the present application recites:

58. An article of manufacture comprising a computer-readable medium having stored thereon instructions adapted to be executed by a processor, the instructions which, when executed, define a series of steps to be used for restoring a previous version of a three dimensional mesh model, said steps comprising:

retrieving a stored copy of an earlier state of the three dimensional mesh model;

retrieving an ordered list of operations; and

performing at least some of the operations in the ordered list of operations on the retrieved copy of the three dimensional mesh model;

wherein the ordered list of operations contains the operations which if performed in order on the earlier state of the three dimensional mesh model would result in a current state of the three dimensional mesh model.

As explained above, Dimsdale describes an undo function which is accomplished by performing, on the present copy of the geometric model, the reverse of the operation that is to be undone and is thus limited to operations which are reversible ("undo-able" as Dimsdale states). In contrast, the invention of claims 5 and 58 retrieves a stored copy of a mesh model and an ordered list of operations and performs at least some of those operations on the retrieved mesh model. Thus, one possible application of the invention of claims 5 and 58 is an undo function where each retrieved operation may be applied to the retrieved copy of the mesh model until the desired "level" of undo is reached, regardless of whether each individual retrieved operation is "undo-able." *See also* page 8 of the specification.

Claims 6 to 10 and 59 to 63 depend from claims 5 and 58. Accordingly, the arguments presented above in connection with claims 5 and 58 apply equally to claims 6 to 10 and 59 to 63. In view of the foregoing, it is submitted that Dimsdale does not anticipate any of claims 5 to 10 and 58 to 63. Furthermore, Fujita does not cure these deficiencies of Dimsdale (nor has the Examiner alleged that Fujita does).

Thus, it is respectfully submitted that the rejection of claims 5 to 10 and 58 to 63 under 35 U.S.C. § 102 over Dimsdale or under 35 U.S.C. § 103 as being unpatentable over

Dimsdale in view of Fujita should be withdrawn.

As to the rejections of claims 55 to 57, 114, 116 and 117 under 35 U.S.C. § 102(a) as being disclosed by Official notice, Applicants respectfully submit that the Examiner's reliance on Official Notice without documentary evidence to reject the claims is inappropriate. Section 2144.03 of the MPEP states:

> Official notice without documentary evidence to support an examiner's conclusion is permissible only in some circumstances. While "official notice" may be relied on, these circumstances should be rare when an application is under final rejection or action under 37 CFR 1.113. Official notice unsupported by documentary evidence should only be taken by the examiner where the facts asserted to be well-known, or to be common knowledge in the art are capable of instant and unquestionable demonstration as being well-known. As noted by the court in *In re Ahlert*, 424 F.2d 1088, 1091, 165 USPQ 418, 420 (CCPA 1970), the notice of facts beyond the record which may be taken by the examiner must be "capable of such instant and unquestionable demonstration as to defy dispute" (citing *In re Knapp Monarch Co.*, 296 F.2d 230, 132 USPQ 6 (CCPA 1961)).

Applicants respectfully submit that the Examiner's general reference to certain software products as meeting all the limitations of independent claims prior to the present application's filing date of March 28, 2001 is not "capable of such instant and unquestionable demonstration as to defy dispute." Furthermore, the lack of specific references to such documentary evidence makes it impossible for Applicants to specifically respond to or refute the Examiner's rejection. Applicants respectfully submit that the rejection of claims 116 and 117 under 35 U.S.C. § 102(a) in view of Official Notice should be withdrawn.

Claims 55 to 57 and 114 depend from claims 116 and 117. Accordingly, the arguments presented above in connection with claims 116 and 117 apply equally to claims 55 to 57 and 114. In view of the foregoing, it is respectfully submitted that the rejection of claims 55 to 57, 114, 116 and 117 under 35 U.S.C. § 102(a) in view of Official Notice should be withdrawn.

As to the Examiner's position that interacting with the current state of the three dimensional mesh model which resides in memory corresponds to "retrieving a stored copy of the three dimensional mesh model," Applicants have amended claim 5 to clarify that the stored copy is "an earlier state of the three dimensional mesh model" and that "the ordered list of operations contains the operations which if performed in order on the earlier state of the three dimensional mesh model would result in a current state of the three dimensional mesh

model."

Applicants respectfully submit that all pending claims are in condition for allowance. Prompt consideration and allowance of the present application are therefore earnestly solicited.

The Office is hereby authorized to charge any additional fees or credit any overpayments under 37 C.F.R. § 1.16 or § 1.17 to Deposit Account No. 11-0600.

The Examiner is invited to contact the undersigned at (212) 425-7200 to discuss the application.

Respectfully submitted,

Dated: October 20, 2005   By:_____
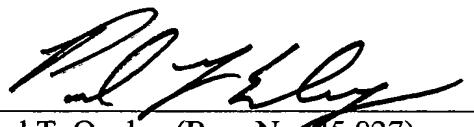
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